

Trial 5. HYC PGR x harvest date trial- Time of sowing 1 (FAR SAC B22-05-1)

Objectives:

To assess the value of PGRs with delayed harvest in HRZ regions.

Key points:

- The harvest date trial in the first time of sowing was sown into plots of Pixel, a 6-row winter barley known for potential head loss at crop maturity.
- Although there was no significant interaction between PGR management and harvest date, there was a trend for a delayed harvest to decrease yield by 1.59 t/ha.
- Both a double Moddus Evo application and the 'European' PGR approach were higher yielding than the untreated, however a single application of Moddus Evo on average was higher yielding than the other PGR managements.
- The combination of Pixel with a single Moddus Evo application and harvesting on time gave the highest barley yield on site (8.43 t/ha).
- Harvest date and PGR management had very little impact on grain quality with the exception of improved test weight with an on-time harvest.

Treatments: 4 PGR management approaches applied to Pixel, to be harvested at two harvest dates. PGRs are applied at either 1, or 2 growth stages.

Table 1. Growth stage timings and rates of plant growth regulators (PGR's).

Treatment ID	GS31	GS37
Untreated	---	---
GS31 PGR	Moddus Evo 400 mL/ha	---
GS31+37	Moddus Evo 200 mL/ha	Moddus Evo 200 mL/ha
GS31+GS37 Euro PGR	Moddus Evo 200 mL/ha	Promote 1000 360 mL/ha

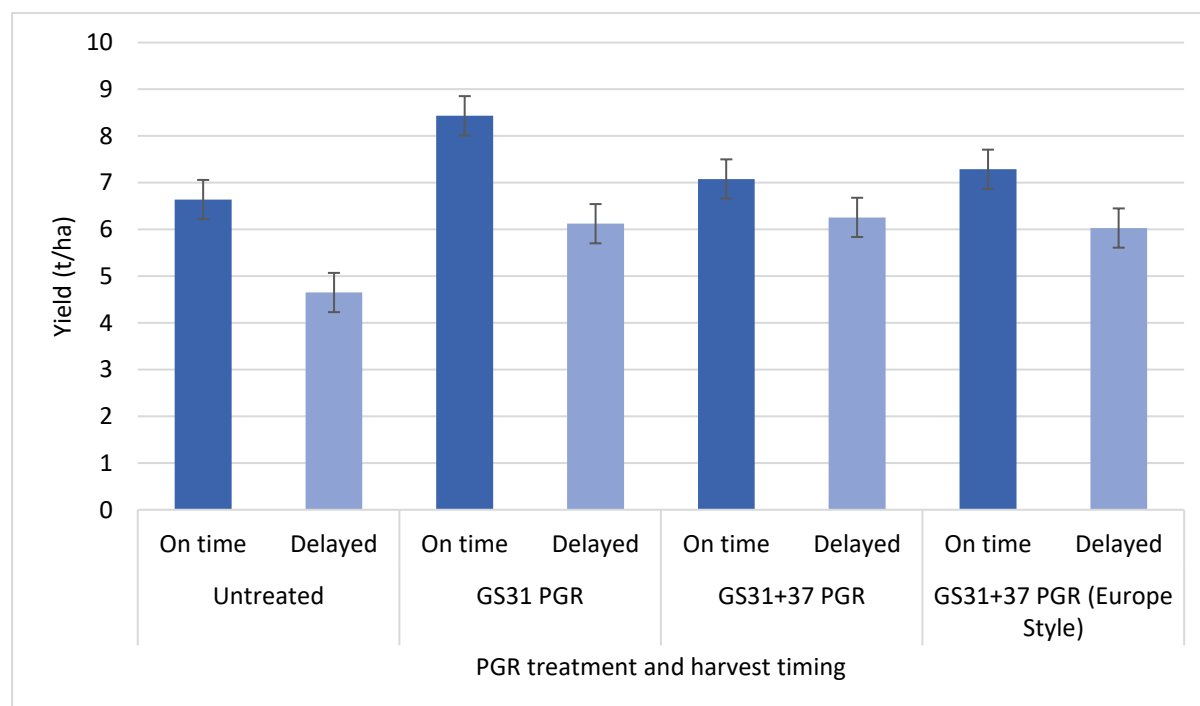


Figure 1. Influence of Harvest Date and PGRs on grain yield (t/ha) in Pixel. LSD (P=0.05) = 0.82 t/ha.

Table 2. The effect of PGRs and HD on grain yield (t/ha).

	Yield (t/ha)
Harvest Date	
On time	7.36 a
Delayed (28 days delay)	5.77 b
Harvest Date LSD (P=0.05)	0.64
Harvest Date P-Value	0.004
Canopy Management Regime	
Untreated	5.65 c
GS31 PGR	7.28 a
GS31 + GS37 PGR	6.70 b
GS31 + GS37 PGR (Europe style)	6.67 b
Canopy Management Regime LSD (P=0.05)	0.58
Variety x Canopy Mgmt Regime P-Value	<0.001
Harvest Date. x Canopy Mgmt. Regime	
On Time	
Untreated	6.64 -
GS31 PGR	8.43 -
GS31 + GS37 PGR	7.08 -
GS31 + GS37 PGR (Europe style)	7.29 -
Delayed	
Untreated	4.65 -
GS31 PGR	6.12 -
GS31 + GS37 PGR	6.26 -
GS31 + GS37 PGR (Europe style)	6.03 -
Harvest Date x Canopy Mgmt LSD (P=0.05)	0.82
Harvest Date x Canopy Mgmt x Variety P Val	ns

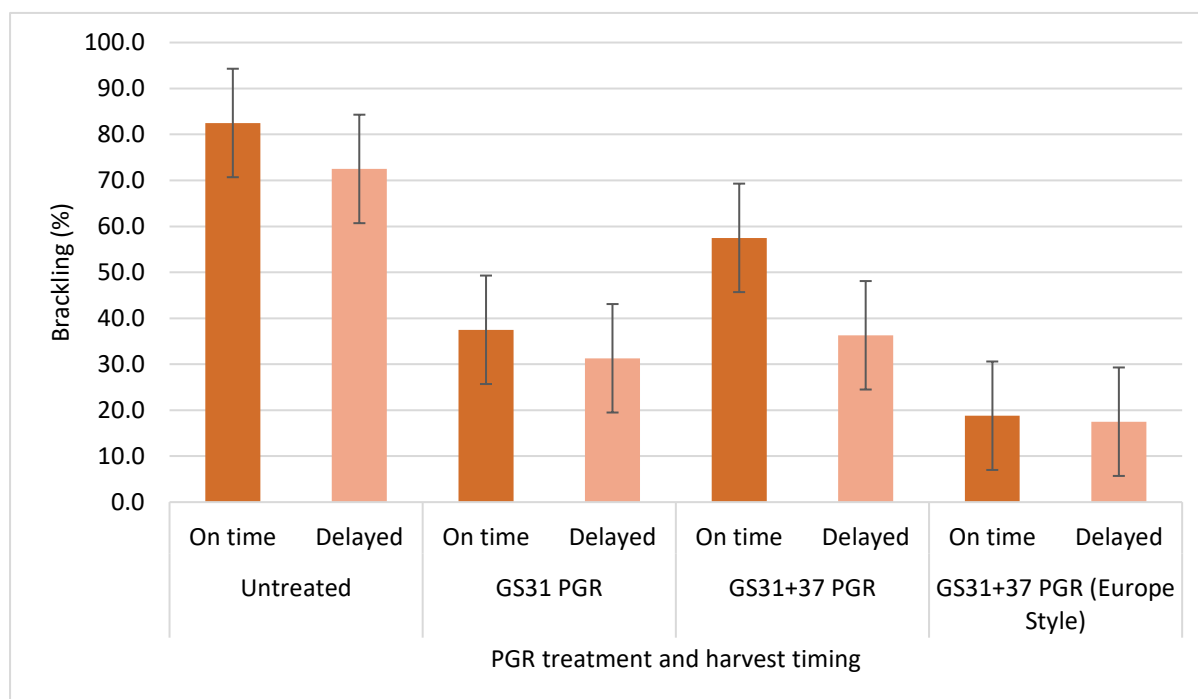


Figure 2. Influence of Harvest Date and PGR's on brackling (%) in Pixel. LSD (P=0.05) = 23.6%.

Table 3. Effect of PGRs and harvest dates on grain quality (protein (%), test weight (kg/hL), screenings (%) and retention (%)).

	Protein (%)	Test Weight (kg/hL)	Retention (%)	Screenings (%)
Harvest Date				
<i>On time</i>	13.4 -	67.8 a	87.3 -	3.4 -
<i>Delayed (28 days delay)</i>	13.5 -	66.5 b	84.9 -	3.9 -
Harvest Date LSD (P=0.05)	ns	0.9	ns	ns
Harvest Date P-Value	0.505	0.023	0.065	0.255
Canopy Management Regime				
<i>Untreated</i>	13.6 -	67.0 -	85.7 -	4.0 -
<i>GS31 PGR</i>	13.3 -	67.3 -	86.5 -	3.3 -
<i>GS31 + GS37 PGR</i>	13.5 -	66.8 -	84.8 -	3.6 -
<i>GS31 + GS37 PGR (Europe style)</i>	13.5 -	67.6 -	87.6 -	3.6 -
Canopy Management Regime LSD (P=0.05)	ns	ns	ns	ns
Variety x Canopy Mgmt Regime P-Value	0.326	0.452	0.087	0.344
Harvest Date. x Canopy Mgmt. Regime				
On Time				
<i>Untreated</i>	13.6 -	67.6 -	86.8 -	3.7 -
<i>GS31 PGR</i>	13.2 -	68.0 -	87.9 -	3.0 -
<i>GS31 + GS37 PGR</i>	13.6 -	67.7 -	86.0 -	3.4 -
<i>GS31 + GS37 PGR (Europe style)</i>	13.4 -	67.8 -	88.6 -	3.5 -
Delayed				
<i>Untreated</i>	13.6 -	66.5 -	84.6 -	4.3 -
<i>GS31 PGR</i>	13.4 -	66.6 -	85.1 -	3.7 -
<i>GS31 + GS37 PGR</i>	13.5 -	65.8 -	83.5 -	3.8 -
<i>GS31 + GS37 PGR (Europe style)</i>	13.6 -	67.3 -	86.5 -	3.7 -
Harvest Date x Canopy Mgmt LSD (P=0.05)	ns	ns	ns	ns
Harvest Date x Canopy Mgmt x Variety P Val	0.623	0.599	0.990	0.913

Table 4. Trial input and management details.

Sowing date:		21 April
Harvest date 1:		18 December 2022
Harvest date 2:		9 January 2023
Plant population:		180 seeds/m ²
Basal fertiliser:	21 April	100 kg MAP (10 N)
Nitrogen:	6 Jul	109 kg N/ha
	23 Aug	217 kg N/ha
PGR:		As per treatment list
Fungicide:	GS31	Prosaro 300 mL/ha
	GS39	Radial 840 mL/ha
	GS61	Opus 500 mL/ha